**Physics Study Guide Final Test 2012**

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| **Check Off** | **Objectives** |
|  | I can identify the force which binds atoms and from molecules |
|  | I can explain the main difference and similarities between gravitational and electrical forces |
|  | I can explain how electrical and gravitational forces strength is depended on distance |
|  | I can identify the parts of the atom, their charge |
|  | I can identify and explain the primary and secondary functions of a lightning rod |
|  | I can identify the factors needed for current to flow |
|  | I can identify the effect of a diode on current and the effect of resistance and heat on current flow |
|  | I can distinguish the difference between AC and DC current |
|  | I can Relate the source of electrons in any ordinary electric circuit when given examples |
|  | I can relate the difference between the function of generators and motors in transforming electrical and mechanical energy: AC/DC energy; |
|  | I can classify circuits as parallel and series when given examples |
|  | I can analyze series and parallel circuits and predict how adding more lamps will affect the current flow |
|  | I can identify the source of magnetism |
|  | I can identify the areas of earth where cosmic ray intensity is greatest |
|  | I can I can predict the outcome when magnets and wire loops are moved in relation to each other; number of coils and strength of magnet is changed: and change in a magnetic field |
|  | I can Evaluate objects that move vertically in relation to speed, velocity, acceleration, free fall and terminal velocity |
|  | I can explain how inertia affects objects moving or at rest with or without additional energy added |
|  | I can predict what will happen in an object in circular motion loses the force that holds it in the rotational motion |
|  | I can differentiate between scalar and vector quantities when given units |
|  | I can predict what will occur to falling objects; heavy vs. light; with air resistance vs. no resistance |
|  | I can predict what happens as an object moves up, pauses, and then comes back down as to time, velocity, and acceleration. |
|  | I can relate the acceleration and speed of falling objects to those that are projectiles. |
|  | I can explain the relationship between constant velocity, constant acceleration, velocity and acceleration |
|  | I can solve problems involving acceleration |
|  | I can solve problems to determine how far an object will fall when given time of fall |
|  | I can solve for weight and force when given mass. |
|  | I can give the definition of gravity and its unit |
|  | I can predict acceleration change of an object moving along a straight-line path when given the force |
|  | I can add vectors for forces to determine net force |
|  | I can identify/name Newton’s 3 laws of motion |
|  | I can identify action/reaction forces when given a scenario |
|  | I can predict reaction forces affects (rifle shoots bullet type of scenario) |
|  | I can describe the relationship between impulse and momentum |
|  | I can predict the effect of force on momentum when given scenario |
|  | I can identify how acceleration, velocity and momentum change for falling objects |
|  | I can determine force when given mass, velocity and time |
|  | I can predict what will happen in action/reaction situations with equal masses |
|  | I can predict what will happen in action/reaction situations with unequal masses |
|  | I can identify when work is being done (movement and direction of force) |
|  | I can relate how power affects work |
|  | I can identify examples of potential vs. kinetic energy |
|  | I can predict potential/kinetic energy based on changing position |
|  | I can solve work problems |
|  | I can solve kinetic energy problems |
|  | I can relate the effects of work, impulse and time force is acting |
|  | I can identify the relative speed of objects revolving on the inside and outside of a disk |
|  | I can identify the type of movement produced by torque |
|  | I can recognize that revolving objects spin faster as they collapse and slow down as they expand |
|  | I can explain that g is the amount of gravity produced by earth and is the ideal for space colonies |
|  | I can identify the paths of planets, predicted by Kepler are ellipses |
|  | I can discuss how gravity is determined by mass and distance and the effect that planets increasing or decreasing in size would have on objects on its surface |
|  | I can explain how the collapsing of a sun to form a black hole does not affect it’s gravitational attraction |
|  | I can explain how according to special relativity it may be possible to travel in time, but only forward |
|  | I can Interpret Einstein’s theory of special relativity |

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| Define |
| Recognize |
| Compare |
| Differentiate |
| Classify |
| Demonstrate |
| Interpret |
| Solve |
| Interpret |
| Relate |
| Analyze |
| Organize |
| Contrast |
| Compare |
| Distinguish |
| Discuss |
| Justify |
| Evaluate |
| Choose |
| Estimate |
| criticize |
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